



The Closed-Loop Scoop

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Department of Transportation Walks the Talk

Over the road and through the compost, by Chery Sullivan

"Did you see that? Look . . . I think it's compost!" I was so excited as I drove north on I-5 from Olympia to Dupont to visit Grandma. And before I even asked, my husband said "No, we're not stopping on the freeway so you can run your fingers through the compost." OK, perhaps my enthusiasm for all things composty is excessive, but I'm not alone—I had to find out who spread those piles of compost along I-5.

The search finally led to Steve Thompson, Senior Hydraulics Design Engineer with the Washington State Department of Transportation (WSDOT) in Tumwater. Steve has been pushing compost use along state highways for 10 years. "Compost applied as a blanket acts as a filter and mimics natural systems," Steve says. And along state highways, compost could be the natural solution to the pollution that washes off the roads.

WSDOT designed this particular project above Olympia in Thurston County to improve water quality in McAllister Creek. The compost was laid down like a blanket on the shoulders of I-5, and then grass seed was blown on top of the compost. As rain washes pollutants (such as oil, gas, grease, and heavy metals) off the roads, compost and grass absorb water and filter pollutants from the road run-off, which eventually flows into McAllister Creek.

Applying a compost blanket to absorb water and filter run-off was a much less expensive way to improve water quality than other engineered options, such as mechanical separators and settling ponds. WSDOT will use the money

saved on this compost project to monitor the stormwater running in to McAllister Creek.

Using compost for stormwater treatment can potentially save tax payers millions of dollars—yes, millions! But more research is needed, especially in the Pacific Northwest. Does compost still provide erosion control and water quality benefits after 30 days of rain? Can the bioretention properties of compost reduce the need for flow-control ponds? How does compost perform on steeper slopes? Should compost be mixed in with existing soils or laid on top like a blanket? Should grass seed be mixed in with compost or applied on top? How do compost amended landscapes improve water quality? The answers to these questions could increase the use of compost along our state highways.

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Walking the Talk

Ecology's Beyond Waste Plan highlights organic materials as one of the key initiatives to move the state *Beyond Waste*. Increasing recycling for organic materials will help Washington capture over 30% of what is currently in the waste stream and turn the waste into a resource.

Lead by example in state government is a starting point in the Beyond Waste Plan for many of the initiatives, including organics. There is no better example of leadership than the WSDOT's using local compost and creating a growing demand for organics recycling.

Contact Chery Sullivan at the Department of Ecology, 360-407-6915 or chsu461@ecy.wa.gov for more information about compost use statewide.

Single Cart program wins award

And a couple of other programs win, too



"The freedom from sorting and the addition of plastics seem to be a winning combination."

Pierce County Solid Waste Division is a winner in the National Association of Counties Achievement Award Program. This program recognizes efforts of counties to promote responsible, responsive and effective government. The division was cited for its Single Cart Recycling Program, which replaced the three-bin system a year ago with gratifying results.

"Solid Waste Administrator Steve Wamback and his team are to be commended for the highly successful implementation of this new program," said County Executive John W. Ladenburg. "Converting 135,000 households from a system that had been in effect 14 years was no easy task."

Single Cart program accomplishments included:

- 64 percent increase in residential recycling.
- Participation rate increased to 93 percent (from 88 percent in 2004).

- Paper and cardboard recycling increased 83 percent.
- Households recycled monthly average of 44.5 pounds.

Wamback attributed the positive results to the new program's ease of use. "The freedom from sorting and the addition of plastics seem to be a winning combination," he said.

The Solid Waste Division staff and the private sector haulers and recyclers worked two years to design and implement the Single Cart system. "This partnership is to be commended for putting together such a workable system for the public benefit," Wamback said.

The National Association of Counties will present this and other achievement awards at its 71st Annual Conference August 6 in Chicago. Other Washington State winners of an achievement award this year include Northwest Natural Yard Days and King County's EcoConsumer Campaign.

Calendar of Events

September 14-17, 2006, Livable Communities: Walking, Working, and Water, Seattle, will engage design professionals, public officials, and others in an exploration of the intersecting spheres of community and environment through design. To learn more, visit the conference Web site at http://www.aia.org/ev_rudc_seattle2006.

September 19-21, 2006, Wastecon 2006 will take place in Charlotte, N. Carolina. For details, contact SWANA at 800-467-9262 or visit their Web site at <http://www.swana.org/sections/wastecon/>.

September 28-30, 2006, Westcoast Green: Residential Building Conference & Expo, San Francisco. For details, call 800-724-4880 or visit the Web site at <http://www.westcoastgreen.com/>.

October 22-25, 2006, 25th Annual Congress & Expo of the National Recycling Coalition will take place in Atlanta. For details, contact the NRC at 202-347-0450 or visit the Web site at <http://www.recyclingconference.org>.

November 10-12, 2006, Tilth Producers Conference will be held in Vancouver, Wash. To learn more, call 206-442-7620, or visit the conference Web site at <http://www.tilthproducers.org/conference.htm>.

November 15-17, 2006, GreenBuild International Conference & Expo, Denver. For more information, call 330-425-9330 or visit the conference Web site at <http://www.greenbuildexpo.com>.

December 7-8, 2006, Northwest Environmental Conference, Portland. To learn more, visit <http://www.nwec.org/>.

Litter Hotline Has Impact

Analysis of feedback from litterbugs, by Megan Warfield

The litter hotline, 866-LITTER-1, has been operating since 2002. The primary purpose of the hotline is to send a message to litterers that they can be caught littering and it could hurt their pocket books. It also gives concerned citizens an opportunity to be involved in the litter-prevention campaign by reporting littering.

It's all about public involvement and education: Road signs, posters, litterbags, and advertising have extensively spread awareness of the litter problem and promoted the hotline number.

Calls to the litter hotline have grown significantly since its debut in April of 2002, averaging 1200 calls a month. Peaks in call volume tend to be seasonal and have generally followed advertising efforts.

While every call is processed, not every call results in a letter from the Washington State Patrol to the owner of the vehicle. A letter might not be sent for several reasons: the call was disconnected, the license plate number had no "match" in the Department of Licensing (DOL) system, the report was a duplicate, or the vehicle had an out of state plate. As of June 30, 2006, the litter hotline had received 59,410 calls and 45,307 letters were sent.

The letters provide a personal and powerful mechanism for ensuring potential litterers know the laws and fines associated with litter. However, the program is costly. At the current call rate, the hotline program costs \$65,000 a year (costs include a contract with a call center, AT&T bills, postage, staff time, and a small charge from DOL to access their system).

Considering the significant cost and effort put in to the litter hotline program, Ecology decided to measure its effectiveness in raising awareness of litter fines and ultimately changing litter behavior.

In June 2005, Ecology began inserting a postage-paid postcard survey with each hotline letter to track how litterers responded to getting the warning letter from the State Patrol. The results of the postcard survey clearly indicate that the hotline program is working.

As of April 2006, 683 postcard surveys had been returned, representing an 8-10% return rate, which is very good for this type of survey.

Here are some key findings:

- The first question on the survey asked if the letter accurately reflected what happened. 33% of respondents acknowledged that they did indeed litter, while 66% denied the behavior (claiming, "It wasn't me," "Not my car," etc.).
- 92% of respondents claim awareness of litter fines, with 77% perceiving the fines to be severe or very severe. This differs from a poll of the general population where only 57% believed the fines to be severe or very severe.
- 68% of respondents believe they are somewhat or very likely to get caught and fined, while only 30% of the general population held such beliefs.
- 92% of respondents state that they are not likely to litter again.
- 78% of respondents believe the hotline program is somewhat or very effective compared to only 51% of the general population.

So what does this mean?

Clearly the Hotline and letters are an effective way to raise awareness and change perceptions regarding litter fines and the likelihood of being caught, regardless of whether the recipient admits to littering. Considering these are two of the "litter and it will hurt" campaign's main objectives, it would seem the hotline program is a wise investment.

The combination of the letter, postcard survey, and litterbag seems to bring home the message about the severity of the fines, likelihood of being caught, and effectiveness of the program.

As Ecology begins charting out the next few years of campaign activity, promoting the litter hotline will receive more emphasis. The campaign will maintain the "litter and it will hurt" theme, encouraging people to call the hotline and working with the law enforcement community to strictly enforce the law and issue fines. A new campaign plan will be unveiled later this fall.

So when you see someone litter, call 866-LITTER-1 (509-548-8371).

For more information please visit http://www.ecy.wa.gov/programs/swfa/litter/c_hotline.html.

Cleaning Out Unwanted Medications

Rx is Product Stewardship

Almost every household has them: unwanted, expired, and forgotten medicines, ointments, inhalers, and vitamins. Meanwhile, pharmacists hand out more and more medications each year; the number of US prescriptions sold increased 70% from 1993 to 2003). Unused medications accumulate in homes until people are faced with cleaning out their (or a deceased relative's) medicine cabinet.

According to a 2006 SoundStats survey in King County, about two-thirds of households have some medications they do not plan to use in the next six months. Responding to a 2005 survey by the King County Department of Natural Resources, more than 36 percent said they will eventually dispose of these medications with the garbage, while nearly 30 percent said they would use a sink or toilet for disposal. But how much waste is out there remains mostly unknown. Though the need is obvious, numerous barriers have prevented pharmacists from providing safer avenues of disposal for unwanted medications that are no longer needed.

Consequences:

Once medications go in the garbage or down the drain, they enter the environment, primarily through discharged wastewater or accumulation in biosolids. Not only are scientists now detecting the actual drug formulations at low levels, they are also finding metabolites. Though connections to environmental impacts are not clear and obvious, one recent Italian study (2006) investigated the effects of 13 drugs combined to mimic levels detected in the environment. The study found:

- At environmental exposure levels, the drug mix inhibited the growth of human embryonic cells.
- Results suggest that a mixture of drugs at one-part-per-trillion levels can inhibit cells proliferation by affecting their physiology and morphology.

Other data conclusively link both pharmaceuticals and personal care products to effects on aquatic organisms, and this leads to questions regarding human health impacts.



Solutions:

Medications come in a mind-numbing range of chemical formulations—approximately 8 percent meet federal hazardous waste criteria, but many others, including aspirin, will meet Washington State criteria for persistence and toxicity. To add another layer of complexity, the Drug Enforcement Agency regulates 27,000 drugs, and its rules explicitly state that those drugs, once prescribed, cannot be returned to the pharmacist (or anyone else, for that matter). The problem lies in that it is almost impossible to tell from the label if the drug is controlled.

It is also very expensive and difficult to treat pharmaceuticals and their metabolites once they are in wastewater. However, disposal to the sewer, septic tank, and landfill is a known and preventable source of pharmaceutical pollution. Pursuing prevention, a coalition of 12 local and state governments, nonprofit organizations, and private partners have worked to create a take-back network for waste pharmaceuticals from residents.

Governments have typically tried to solve problems such as these. In the solid and hazardous waste fields, we spend a lot of time and money trying to provide collection services. With pharmaceuticals, government collection is not the best or most appropriate solution. The coalition, called PH:ARM (Pharmaceuticals from Households: A Return Mechanism), is using the framework of the Interagency Resource for

continued, next page

(Unwanted medications, continued.)

Achieving Cooperation to develop a more sustainable and long-term approach.

One of the first difficulties PH:ARM must solve is the regulatory barrier. Currently, take-back of pharmaceuticals (because there are controlled substances in the mix) is not legal. If controlled substances were excluded, then it would be possible for pharmacy take-back, but this would not be entirely user-friendly.

Many governments are considering using household hazardous waste (HHW) facilities to manage medications. In Washington, HHW facilities will likely need to operate under the wholesaler rules and the Board of Pharmacy. It is also illegal for these facilities to accept controlled substances for disposal. Finally, most people will not likely use the HHW facility for their medications, meaning that the problem of waste medications in the environment will persist. The 2006 SoundStats survey showed that:

- 84% of respondents indicate a local pharmacy would be the most convenient location to dispose of unused or expired medicines.
- 4% said they would be willing to use the sheriff or police office, 5% said special collection event, 2% said public hazardous waste facility.

Alternatively, PH:ARM is basing its model on product stewardship programs in British Columbia and Australia. These approaches are extremely cost-effective and are either entirely funded or partially funded by the pharmaceutical industry. If we extrapolate British Columbia collection data to Washington, we will collect 83,000 pounds of medications, which includes 7,300 pounds of controlled substances. That is over 68 million pills!

PH:ARM strongly feels that the most logical place to return medications is where you purchase them. The first phase of this approach is at clinical pharmacies, beginning in summer 2006. Coming phases will include retail pharmacies, nursing homes, animal clinics, and boarding homes.

For more information about the pilot, visit <http://www.productstewardship.net/productsPharmaceuticals.html>, or contact Emma Johnson, Project facilitator, Washington Department of Ecology, ejoh461@ecy.wa.gov or at 425-649-7266.

Re Store Studies Deconstruction

Have you ever watched a crew demolish a building and wondered why it is necessary to send the whole thing to the landfill? The process of “deconstruction” accomplishes the same goal, but combines machine demolition with hand-salvaging, recycling up to 95 percent of the building materials. Reclaimed materials can include anything from cabinets, doors, windows, and fixtures to framing lumber, plywood, and beams.

Deconstruction is a growing industry, as seen by national conferences, consortiums of businesses, nonprofit organizations, and industry experts. Research in Bellingham, conducted over the last 18 months by The RE Store, is proving that deconstruction is a viable economic solution, as well as a wise environmental practice. With lumber and gas prices climbing, recovering local materials is making more sense all the time.

The RE Store received a grant from the U.S. Environmental Protection Agency to conduct a series of case studies, assessing the deconstruction process and compiling data. Statistical data was collected on many different aspects of the projects, including labor, separating materials, tools and equipment costs, resale of salvaged materials, and more. The deconstruction crew dismantled four buildings in Whatcom County: two residential homes, a barn, and a 10,000-square-foot office building. Anywhere from 75 to 90 percent of the buildings was resaleable or recycleable into new materials. Property owners were very pleased to know that their project was contributing to the growing body of research and practices of the green building movement. Erin Marden, Deconstruction Manager for The RE Store, is proud to offer the service after years of working to make the program viable. “People know that waste is a big problem and to know that they are a part of the solution means a lot to them. Ten years ago, this wasn’t even an option.”

With the study now complete, The RE Store is sharing its findings locally, regionally, and nationally. To view the case studies or the final summary, visit The RE Store’s Web site at <http://www.re-store.org/fieldservices2.htm#deconstruction>.

Awards Recognize Environmental Stewardship

Schools also find help to fund new programs

The annual Terry Husseman Sustainable School Awards program culminated in a ceremony on May 19, 2006, at the State Capitol Rotunda in Olympia. Twenty-two schools shared almost \$30,000 in awards, and all but a few sent students to the ceremony.

The program recognizes schools for managing and using materials to produce less waste. Judges consider each school program's creative features, its purchasing practices, and its success at reducing waste and increasing recycling.

The three categories of awards are the:

- **Seed Award** that assists schools with the costs of starting up programs. Twelve schools received awards ranging from \$900 to \$2,500.
- **Sustainable School Award** that acknowledges schools with ongoing waste-reduction, reuse, or recycling programs. Nine schools received awards ranging from \$1,000 to \$2,500 each.
- **Environmental Curriculum** category that encourages schools to develop original curricula to teach environmental awareness in Washington schools. One school received an award of \$2,000.

The award for creating an original curriculum went to a program that will have the children take part in the day-to-day operations of the school's recycling program and experience the social issues involved in running it. Other awards will help fledgling programs with start-up costs, and some awards will encourage established programs to continue operating.

"These kids and their schools are making a difference," said Cullen Stephenson, manager of Ecology's solid-waste program. "They are making choices that affect



how they and their communities reduce the waste going to landfills. In some cases, they totally avoid producing waste, which is good for all of us."

Many of the programs add composting and green-purchasing plans to the more common recycling activities. Some schools are helping their communities by creating recycling and compost centers, mapping shorelines and providing the maps to businesses and citizens, and planting useful wetland areas.

Representatives Sam Hunt, Jim Dunn, and Larry Springer joined the festivities and each took a moment to say a few words to the audience about the importance of the schools' efforts.

Guests and other visitors enjoyed the educational displays and activities hosted by the Ecology Youth Corps, Litter Program, Ecology Composting Program, and the Hands on Children's Museum. After enjoying the organic refreshments, guests could contribute their leftovers to the Ecology composting bin.

To learn more, visit the School Awards site:
<http://www.ecy.wa.gov/programs/swfa/terryhusseman.html>.

2005-06 Sustainable School Award Recipients

Seed Award

WA State School for the Blind, Clark County, \$1,000
JD Zellerbach Elementary, Clark County, \$2,500
Ocean Shores Elementary, Grays Harbor County, \$1,000
Snoqualmie Elementary, King County, \$1,700
Endeavour Intermediate, Pierce County, \$900
Meridian High, Whatcom County, \$1,000

Hockinson High, Clark County, \$1,000
Entiat/Paul Rumburg Elementary, Chelan County, \$1,200
Tolt Middle, King County, \$1,000
Mt. Si High, King County, \$1,700
Canyon Creek/Cape Horn Skye, Skamania County, \$1,900
Lincoln Middle, Whitman County, \$1,500

Sustainable School Award

Quilcene School, Jefferson County, \$2,500
Redmond High, King County, \$1,000
West Valley High, Spokane County, \$1,000
Acme Elementary, Whatcom County, \$1,000
Kendall Elementary, Whatcom County, \$1,000

Denny Middle, King County, \$1,000
Cottage Lake Elementary, King County, \$1,500
Mt. Baker Junior/Senior, Whatcom County, \$1,000
Harmony Elementary, Whatcom County, \$1,000

Creative Environmental Curriculum

Komachin Middle School, Thurston County, \$2,000

Revision of Biosolids Rule Underway

Avenues available for involvement and information



"The goal of the revision efforts is a fairer, more comprehensive fee structure."

Overview

The Department of Ecology has begun the process to revise the existing state biosolids rule (Chapter 173-308 WAC, *Biosolids Management*). The state biosolids rule has been in effect since 1998. Ecology is seeking to revise the rule to address four basic types of issues: 1) general housekeeping, 2) septage management permitting, 3) permitting process requirements, and 4) fees. The anticipated revisions will affect all facilities subject to the biosolids rule, including wastewater treatment plants, biosolids beneficial use facilities, and septage management facilities (SMFs).

"Housekeeping" The sorts of "housekeeping" Ecology will address are formatting changes, consolidation of sections, language clarifications, implementation of previous policy decisions, and consistency with the biosolids general permit. The expected outcome is a shorter rule that is consistent with program policy and the 2005 biosolids general permit.

"Septage" People have always had questions and concerns about rule requirements for SMFs. In 2003 a *Septage Management Advisory Committee* recommended the rule be revised to explicitly require all SMFs to be covered under the biosolids general permit. Ecology expects the revised rule will contain a permitting requirement.

"Process" The permitting process can be fairly complicated and costly for some facilities—especially smaller facilities. Ecology is seeking to simplify and clarify the process as much as possible while ensuring that it continues to be both open and public and consistent with the federal biosolids program.

"Fees" The state biosolids program is supposed to be funded entirely through permit fees, but the program is collecting only about 68 percent of the funds needed

to support the current staff, resulting in an estimated shortfall of \$200,000 per year. The discrepancy in fees collected is greater for some types of fee payers than others. For example, fees from SMFs are covering only about 12 percent of the current staff time committed to implementing the septage portion of the program. Also, currently approximately one-third of facilities are not paying any fee at all. The goal of the revision efforts is a fairer, more comprehensive fee structure.

Advisory Group

A Biosolids Rule Revision Advisory Group (BRRAG) has formed. The BRRAG is intended to be representative of stakeholders across the state. The group met on July 7, 2006, in Ellensburg to discuss potential changes under the "housekeeping" and "septage" general categories. The group will meet again in Ellensburg on August 11 to address potential "process" changes. Meetings on September 15 and October 13 in Ellensburg will address "fees." A list of BRRAG members can be found at http://www.ecy.wa.gov/programs/swfa/biosolids/pdf/Biosolids_advisory_list.pdf.

Rule Development Web site and ListServ

Ecology has created a rule development Web site and a rule development ListServ. The Web site will keep interested parties abreast of what's going on, and the ListServ will be used to email information to persons interested in participating in the process. Anyone interested in participating in the process is encouraged to sign up for the ListServ. You can do so by going to <http://listserv.wa.gov/archives/308-biosolids-rule-development.html>. The rule development Web site can be found at <http://www.ecy.wa.gov/programs/swfa/biosolids/ruleDev.html>.

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